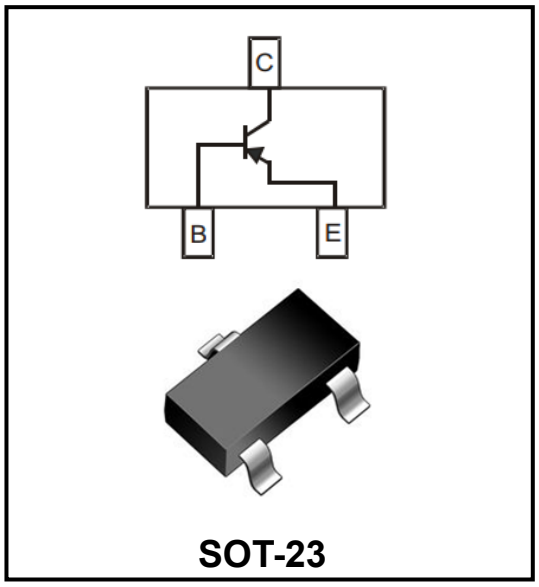
PNP General Purpose Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Part no. with suffix “Q” means AEC-Q101 qualified

Applications

- General purpose switching and amplification

Mechanical Data

- Package: SOT-23
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking: FR.

■ Maximum Ratings (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	-60
Collector-Emitter Voltage	V_{CEO}	V	-50
Emitter-Base Voltage	V_{EBO}	V	-6
Collector Current	I_C	mA	-150
Collector Power Dissipation	P_C	mW	200
Thermal Resistance Junction to Ambient	R_{thJA}	K/W	625
Operating Junction Temperature	T_j	℃	150
Storage Temperature	T_{stg}	℃	-55 to +150

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2SA1037-RQ	F2	Approximate 0.009	3000	30000	120000	7” reel

■ Electrical Characteristics (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	I_C= -50μA, I_E=0	-60		
Collector-emitter breakdown voltage	V_{CEO}	V	I_C= -1mA, I_B=0	-50		
Emitter-base breakdown voltage	V_{EBO}	V	I_E= -50μA, I_C=0	-6		
Collector-base cut-off current	I_{CBO}	nA	V_{CB}= -60 V, I_E=0			-100
Emitter-base cut-off current	I_{EBO}	nA	V_{EB}= -6 V, I_C=0			-100
DC current gain	h_{FE}		V_{CE}= -6V,I_C= -1mA	180		390
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C= -50mA,I_B= -5mA			-0.5
Transition frequency	f_T	MHz	V_{CE}= -12V, I_C=-2mA, f=100MHz		100	
Collector-base output capacitance	Cob	pF	V_{CB}= -12V, I_E=0, f=1MHz		4	

■ Characteristics (Typical)

Fig.1 - Static characteristic

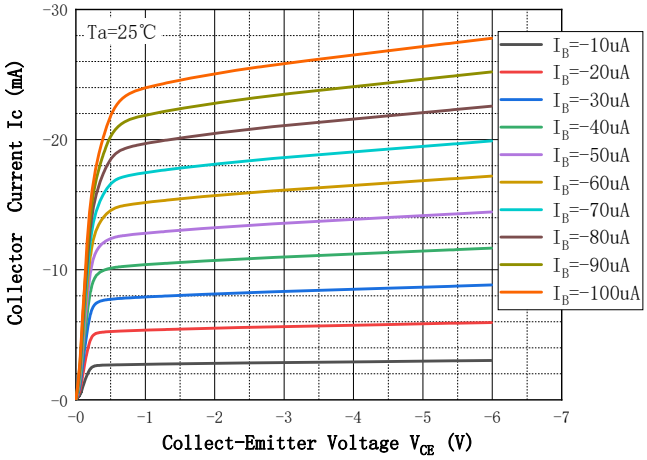


Fig.2 - DC Current Gain

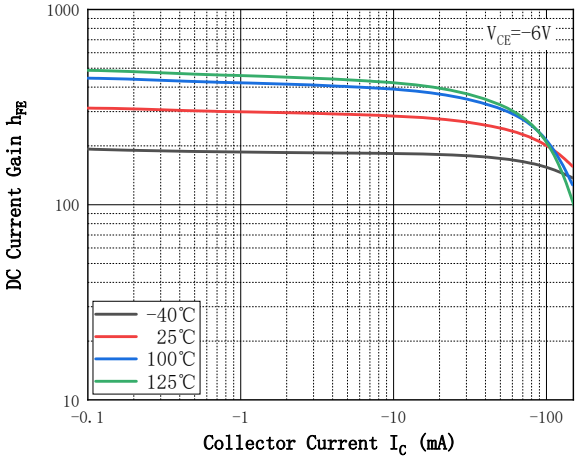


Fig.3 - Collect-Emitter Saturation Voltage

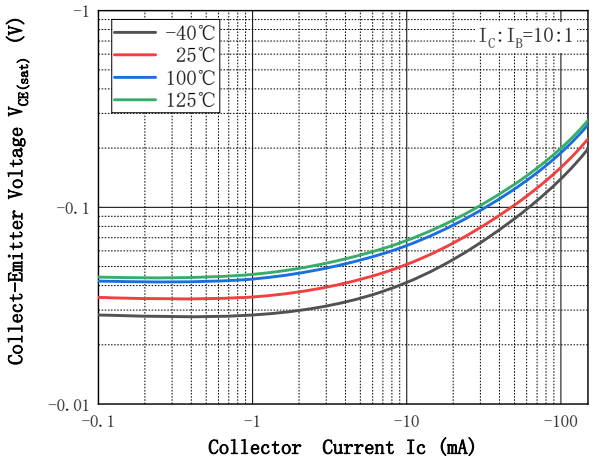


Fig.4 - Base-Emitter Voltage

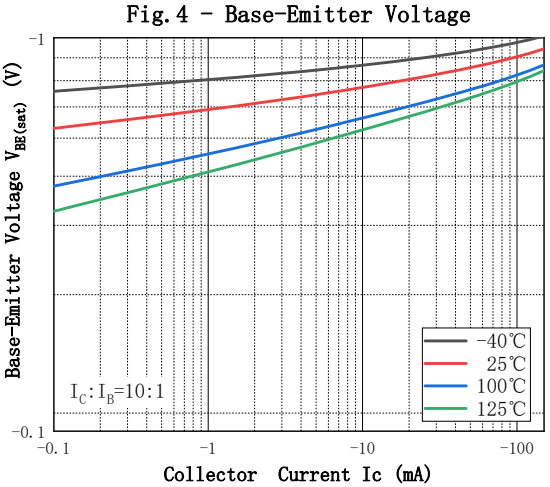


Fig.5 - Base-Emitter On Voltage

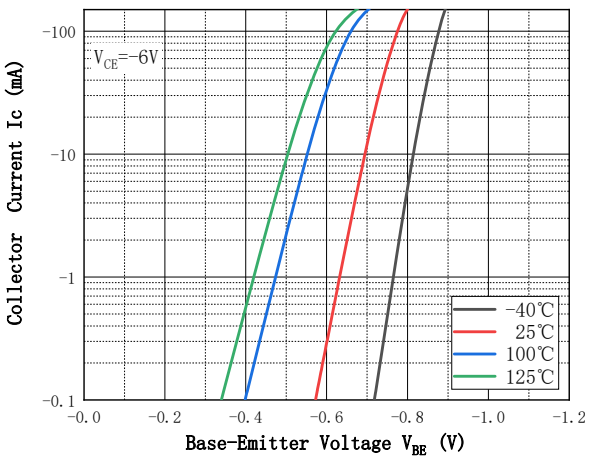
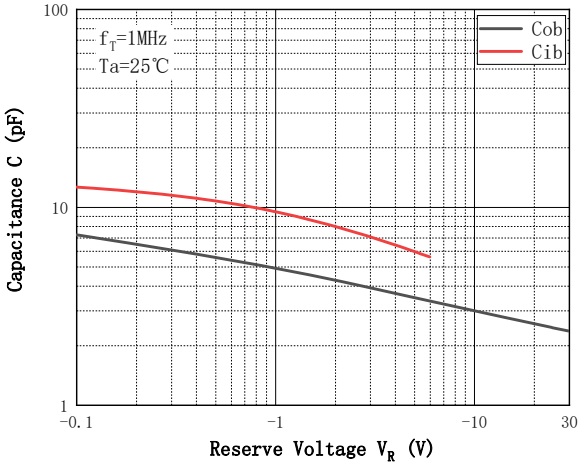
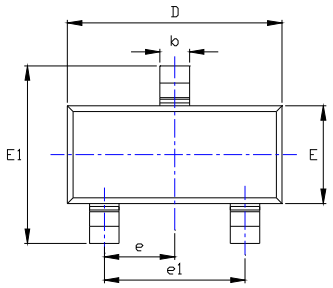


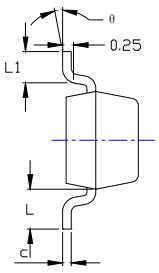
Fig.6 - Cob/Cib—VCB/VEB



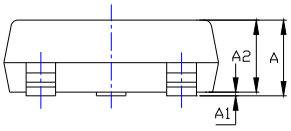
■SOT-23 Package Outline Dimensions & Suggested Pad Layout



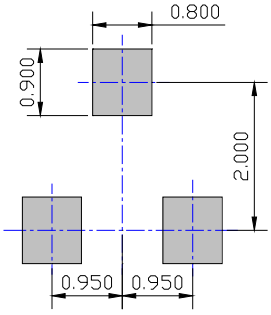
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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